



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,093	06/13/2007	Simon Davies	713-1287	9992
33712 7590 02/27/2012 LOWE, HAUPTMAN, HAM & BERNER, LLP (ITW) 1700 DIAGONAL ROAD SUITE 300 ALEXANDRIA, VA 22314				
EXAMINER				
CHAUDRY, ATIF H				
ART UNIT		PAPER NUMBER		
3753				
MAIL DATE		DELIVERY MODE		
02/27/2012		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/598,093

Applicant(s)

DAVIES ET AL.

Examiner

ATIF CHAUDRY

Art Unit

3753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 July 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1,2,4-9,11,14-23 and 25 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 25 is/are allowed.
- 7) ☒ Claim(s) 1,2,4-9,11 and 14-23 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 08/17/06 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-886)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____
- Paper No(s) Mail Date ____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/26/2011 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "pressure take off point located inside the bore" as recited in claim 5 wherein the bore forms an air passage connecting the inlet and outlet cavities must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2, 4-9, 11, and 14-23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites in lines 15-18: "each cavity having segmental cross-sectioned portion adjacent the pressure take off point" and in line 29, it recites "the pressure take off point is situated either (i) in said at least one of the segmental cross- sectioned portions". It is unclear how a pressure take off point can be in the segmental portion and adjacent the segmental portion at the same time. For purpose of examination, it is assumed that the pressure take off point is in the segmental portion, i.e., located at the wall of the segmental portion.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 2, 4-7, 9, 11, 14, 15, 17-19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gifford et al. (2630291) in view of Desmond (1102730) further in view of Schwartz et al. (5282493).

4. Regarding claims 1, 17, and 18, Gifford et al. discloses a device comprising; a housing 2 having an air inlet 6, an air outlet 8 and an air passage connecting the inlet and the outlet, coupling means (nipples at 6 and 8) at both inlet and outlet; a valve 44 housed in the housing and operable to adjust air flow in the air passage; and valve adjustment means 54 for adjusting an opening of the valve and accessible externally of the housing; wherein the air inlet, air outlet and air passage are shaped and the valve is

positioned so as to provide minimal turbulence of air flow and minimal pressure drop through the device; the air inlet 6 and outlet 8 comprise a pair of cavities, each cavity having a substantially circular cross-sectioned portion adjacent an entry of the air inlet or an exit of the air outlet, respectively; a substantially segmental cross-sectioned portion (the segmental portion of the inlet cavity, for example, being the portion between bottom wall of housing 2 and planar wall 10 and cross wall 4) and passing through a plane 10 which includes a valve seat of the valve, and a tapered section (the tapered section of the outlet cavity, for example, being the portion between top wall of the housing and the cross wall 4) separating the substantially circular and segmental cross-sectioned portions, said tapered section tapering from the circumference of the circular cross-sectioned portion to the chord of the segmental cross-sectioned portion (see for example, tapered section of the outlet cavity from the circular cross-sectioned portion of outlet 8 to the edge of wall 10 and above wall 4); the segmental cross-section portions terminate in a taper (see for example the taper of segmental portion of inlet cavity below wall 4) extending from the chord to the arc of the segmental cross-sectioned portion.

Gifford et al. fails to disclose a pressure take off point connected to a pressure gauge. Desmond (Fig. 2) teaches a valve having inlet 10 and outlet 11 cavities connected by valve air passage 16 wherein an opening 5 in the outer wall of the housing on the opposite side of the valve 25 (and coaxial with the valve) serves as a pressure take off point for connection to a gauge. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. with a pressure take off point

located in the outer wall of the housing coaxial with and opposite the valve as taught by Desmond in order to provide a pressure monitoring feature while preserving compactness of the device.

A pressure take off point located in outer housing wall of Gifford et al. on the opposite side of the valve would be situated in the lower segmental cross-sectioned portion which will experience minimal turbulence because of being far from point from the flow through the valve seat and lack of sharp turns or sharp curves etc. in the vicinity.

Gifford et al. discloses the valve in the segmental portion of the outlet cavity but fails to disclose the valve located in the inlet cavity. Desmond teaches the valve having inlet and outlet cavities such that the valve is located in the inlet cavity and the pressure take off point in the outlet cavity. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. with valve located in the inlet cavity as taught by Desmond as an art recognized substitute location of valve yielding predictable results and in order to improve valve sealing when in closed position (since the pressure from the inlet would tend to assist the valves sealing in closed position). With the valve on the inlet side, the pressure take off point would be located downstream of the valve seat in a region of minimal turbulence (being far from point from the flow through the valve seat).

Gifford as modified with Desmond discloses a mechanical analog pressure gauge but fails to disclose a digital gauge. Schwartz et al. (Fig. 3) teaches digital

pressure gauge 46 (col 3, line 7), a valve 20 arranged coaxially with the gauge, the valve having adjustment means accessible from outside of housing, and the pressure gauge having a readable display opposite the valve knob. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. as modified with Desmond with a digital pressure gauge having a readable display opposite the valve knob as taught by Schwartz et al. in order provide symmetry to the device and to monitor pressure at the flow-control point of the line.

In the recitation "*means for coupling the air inlet with an outlet of a compressed air supply and means for coupling the air outlet with an air inlet of the paint spray gun*", only the means for coupling are seen as structural limitations. Furthermore, the coupling means are seen as capable of attaching a compressed air supply and a paint spray gun.

The recitation in the preamble "pressure monitoring device for a paint spray gun" is considered to be a name given the claimed device relative to its intended use. From M.P.E.P. §2111.02 (II): If the body of a claim fully and intrinsically sets forth all of the limitations of the claimed invention, and the preamble merely states, for example, the purpose or intended use of the invention, rather than any distinct definition of any of the claimed invention's limitations, then the preamble is not considered a limitation and is of no significance to claim construction. *Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1305, 51 USPQ2d 1161, 1165 (Fed. Cir.1999). If a prior art structure is capable of performing the intended

use as recited in the preamble, then it meets the claim. See, e.g., *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed.Cir. 1997). As evidenced by the explanation given above, the claimed structure finds their equivalents in the reference(s) applied. As such the device of Gifford et al. modified in view of Desmond is readable as a "pressure monitoring device for a paint spray gun".

5. Regarding claim 2, Gifford et al. as modified (Fig. 1 of Gifford et al.) discloses air inlet and air outlet are arranged in line with each other.
6. Regarding claim 4, Gifford et al. as modified (Fig. 1 of Gifford et al.) cavities are arranged on opposite sides of a longitudinal axis of the housing with the chords of the segmental cross-sectioned portions in substantially parallel alignment.
7. Regarding claim 5, Desmond teaches the pressure take off point located in a bore 5 which is aligned and concentric with bore 16 that constitutes the valve air passage such that the bores 5 and 16 together constitute a stepped bore comprising the air passage with the pressure take off point located in the stepped bore.
8. Regarding claim 6, Gifford et al. discloses the axis of the bore of valve passage orthogonal to the longitudinal axis of the housing.
9. Regarding claims 7 and 9, Gifford et al. discloses the tapered sections of cavities as symmetrical on both sides with same angle from plane of the valve seat.
10. Regarding claim 11, Curtis Rogers as modified with Gifford et al. fails to disclose relative dimensions of chord surface and arc of the segments. However, it would have been obvious to a person having ordinary skill in the art at the time of the invention to

have provided a longer chord surface based on particular application and space requirements.

11. Regarding claims 14 and 15, Gifford et al. fails to disclose optimal values of angles of the tapered section. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the optimum ranges of the taper claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

12. Regarding claim 19, the method of manufacturing the device does not hold patentable weight since "If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process". (MPEP 2113).

13. Regarding claim 21, Gifford fails to disclose IP66 casing integrity. However, it would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. as modified with a housing having IP66 integrity in order to comply with government regulations where applicable and in order to provide ingress protection.

14. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gifford et al. (2630291) in view of Desmond (1102730) and Schwartz et al. (5282493) further in view of Henry (2718373).

15. Gifford et al. as modified discloses substantially identical tapered sections and cavities but fails to disclose different angles of taper or the claimed optimal values of

taper angles. Henry (Figure) teaches a valve similar to Gifford et al. but with different tapers on each side. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. as modified with Desmond with different angles of taper on either side of valve as taught by Henry in order to provide more space in the segment containing the valve head to accommodate the valve head. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the optimum taper angles claimed, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable dimensions and ranges involves only routine skill in the art.

16. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gifford et al. (2630291) in view of Desmond (1102730) and Schwartz et al. (5282493) further in view of Paddock (4060984).

17. Gifford et al. as modified fails to disclose zinc die cast housing. Paddock (col 1, line 11) teaches using zinc die cast housing for a valve. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. as modified with zinc die cast housing as taught by Paddock in order to reduce machining costs.

18. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gifford et al. (2630291) in view of Desmond (1102730) and Schwartz et al. (5282493) further in view of Teeters et al. (2310558).

19. Gifford et al. as modified fails to disclose a needle valve. Teeters et al. (Fig. 1) teaches valve having a valve moving against a valve seat orthogonally with respect to axis of inlet and outlet wherein the valve in the form of a with a needle head controlled by a threaded knob. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. as modified with a threaded needle valve as taught by Teeters et al. in order to enable precise flow control.

20. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gifford et al. (2630291) in view of Desmond (1102730), Schwartz et al. (5282493) and Teeters et al. (2310558) further in view of Laakaniemi et al. (3835876).

21. Gifford et al. as modified fails to disclose the threads of needle valve configured to allow increments of adjustment of the air flow being at least comparable to the resolution of the pressure gauge. Laakaniemi et al. teaches (col 2, line 45-47) teaches a needle valve with threads configured for adjusting the flow at a desired incremental rate. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided the device disclosed by Gifford et al. as modified with a threads of the needle valve configured for adjusting the flow at a desired incremental rate as taught by Laakaniemi et al. in order to provide required flow control accuracy. Furthermore, for the pressure gauge to be useful for flow rate monitoring, its resolution would also necessarily be comparable to the desired flow rate adjustment resolution. Therefore, configuration of threads of needle valve for desired flow adjustment

increments would also render the same comparable to the resolution of the pressure gauge.

Response to Arguments

22. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection. Gifford et al. is cited as a primary reference showing cavities with segmental section and Desmond et al. has been cited as secondary reference to show teaching of a pressure take-off point aligned with the valve outlet. The pressure take-off point of modified device being co-axial with the valve head would be located in the valve housing segmental section opposite the valve seat on the other side of the valve head and would encounter minimal turbulence as compared to any other point in the vertical plane of the valve seat centerline because of being farthest point from the flow through the valve seat and lack of sharp turns or sharp curves etc. in the vicinity.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ATIF CHAUDRY whose telephone number is (571)270-3768. The examiner can normally be reached on Mon-Fri 8-5 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Hepperle can be reached on (571)272-4913. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Atif H Chaudry/
Examiner, Art Unit 3753

/STEPHEN M HEPPERLE/
Supervisory Patent Examiner, Art
Unit 3753

2/13/2012